

28. OCCURRENCE OF *LOPHOPODELLA CARTERI CARTERI* (HYATT)
(LOPHOPODIDAE : ECTOPROCTA) IN LAKES IN WESTERN HIMALAYA

(With three text-figures)

During the recent faunistic surveys, colonies of a phylactolaematous bryozoan, namely *Lophopodella carteri carteri* (Hyatt) were collected from the Renuka Lake (about 30 km from Nahan, Distt. Sirmaur, Himachal Pradesh) and Mansar Lake (about 60 km from Jammu on Sambha-Udhampur road). Both the lakes are natural ones located at low altitude (650-720 m) and mainly rain-fed. The pH of the water is 7. The water is clear with submerged vegetation in the littoral region.

Lophopodella carteri (Hyatt) is known to occur in India, Java, Japan, China, Formosa, U.S.S.R., Africa, S. Australia and U.S.A. Rogick (1934) recognizes three varieties of this species, namely *carteri* (Hyatt), *himalayana* (Annandale) and *davenporti* (Oka) on the basis of form and number of processes on each end of the statoblast. These processes are about 3-9 of indefinite form or absent in *himalayana*, 6-17 with recurved hooks in *carteri* and 18-20 recurved hooks in *davenporti*. Of the three varieties, only *himalayana* and *carteri* are found in India, the former in the Kumaon Hills at Malwa Tal, Bhim Tal, Sat Tal and Naini Tal (Annandale 1911, 1912) and the latter at Bombay, Madras (Annandale 1911) and Ambala City (Vasisht & Sofet, in press). The statoblasts found in the specimens from Renuka and Mansar Lakes agree well with those of the variety *carteri*. The present discovery of *Lophopodella carteri carteri* extends its geographic range to the northernmost parts of the country.

***Lophopodella carteri carteri* (Hyatt)**

1859. *Lophopus* sp. Carter, *Ann. Nat. Hist.*, (3) 3 : 335. (Bombay).

1866. *Pectinatella carteri* Hyatt, *Comm. Essex Inst.*, 4 : 203.

1911. *Lophopodella carteri*, Annandale, *Fauna Brit. India, Freshwater sponges, hydroids and Polyzoa* : 232.

1934. *Lophopodella carteri* var. *typica*, Rogick, *Trans. Amer. microsc. Soc.*, 53 : 417.

Material examined :

(i) One colony; Renuka Lake, H.P.; alt. 650 m; 17. vii. 76; Raj Tilak. (ii) Several colonies; Mansar Lake, Jammu & Kashmir; alt. 720 m; 4-10. ii. 77; Raj Tilak. (iii) Several colonies; Renuka Lake, H.P.; alt. 650 m, 20, 22. iii. 77; J.M. Julka (from submerged roots and stems of reeds).

DESCRIPTION

Colony: Colony is a lobulate gelatinous mass of yellowish colour and attached to the substratum by a hyaline substance. The zooids arise from a common stalk (Fig. 1).

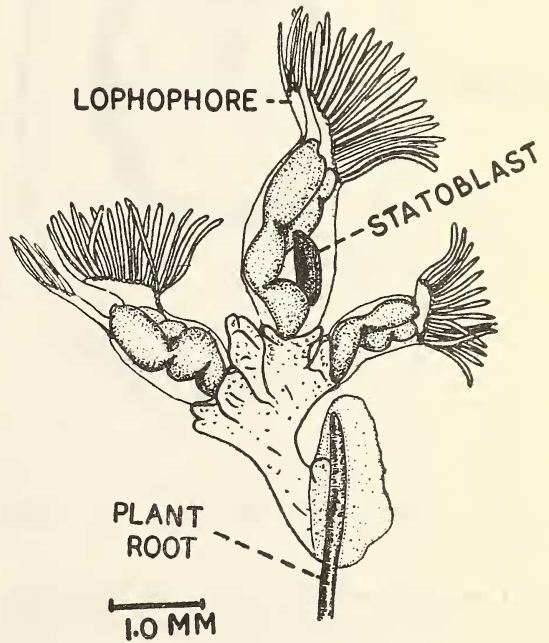


FIG. 1

Fig. 1. A part of the colony of *Lophopodella carteri carteri* (Hyatt).

Zooid: Lophophore horseshoe-shaped, fringed with a row of 76-82 tentacles; the two arms of the lophophore project freely. Tentacles connected basally by a thin and transparent intertentacular membrane, fully retractile into zoecial tube. Mouth overhung by a projecting epistome. Anus outside tentacular crown. Digestive tract brownish, somewhat V-shaped; stomach attached to the body wall by a strong funiculus.

Statoblast: (Figs. 2, 3): Length 0.89-0.95 mm. Width 0.62-0.67 mm. Each statoblast deeply brownish in colour, broadly ellipsoidal

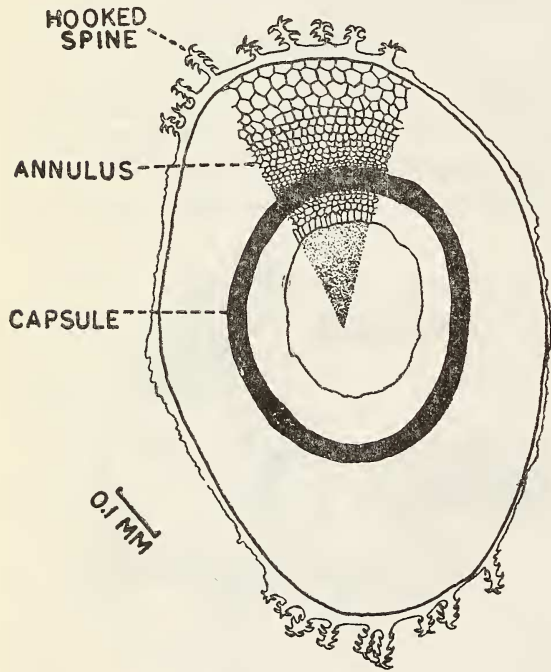


FIG. 2

Fig. 2. Statoblast of *Lophopodella carteri carteri* (Hyatt).

with extremities subtruncate; capsule somewhat circular to elliptical and darker in colour; annulus with air-filled cells which decrease in size towards the capsule; length of capsule 0.43-0.47 mm, width of capsule 0.4-0.42 mm.

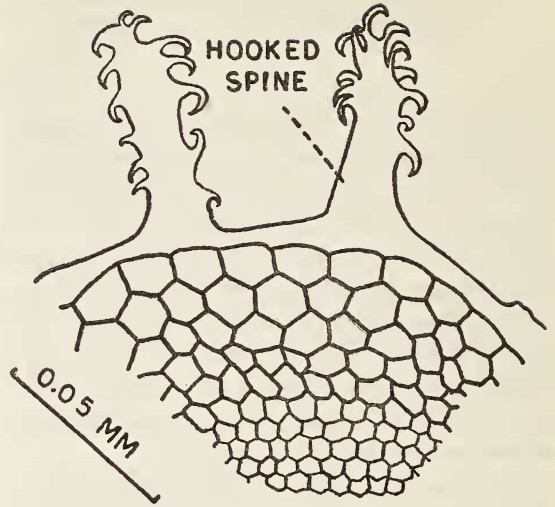


FIG. 3

Fig. 3. An enlarged view of a portion of the Statoblast.

Each extremity of statoblast with 8-10 spines; central spines longer than the lateral ones. Spines furnished with 4-17 recurved hooks.

Remarks: The presence of *Lophopodella carteri carteri* in Renuka and Mansar Lakes of Himachal Pradesh and Jammu and Kashmir respectively can be attributed to the successful transportation of its statoblasts to these lakes, their germination and eventual colonisation. The freshwater bryozoans have a tendency to spread to various parts of the world by transportation of their statoblasts, which in dry state, could be blown to long distances or carried away along with plants and vertebrates. Brown (1933) found some statoblasts still viable and capable of germination after passing through the digestive tracts of amphibians, turtles and ducks. Hymen (1959) states that the statoblasts of *Lophopodella carteri* can germinate after being kept dry at room temperature for about 4½ years. According to Rogick (1959), the colonies of *Lophopodella carteri*, when crushed, are toxic to fish.

ACKNOWLEDGEMENTS

We are grateful to Dr. S. Khera, Joint Director-in-charge, Zoological Survey of India for providing necessary facilities to carry out these investigations.

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April 7, 1977.

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29. *HODGSONIA HETEROCLITA*—AN OIL-RICH CUCURBIT

(With two text-figures)

The Cucurbitaceous plants are known for their oil-rich seeds, and there are reports on the possibilities of using seeds of perennial cucurbits as sources of vegetable fats and proteins (Curtis 1946). The small genus *Hodgsonia* of Asia assumes importance in this context (Burkill 1935; Hu 1964; Uphof 1968). Of its two species, only *H. heteroclita* Hook. f. & Thoms. occurs in India (Anonymous 1959; Chakravarti 1959) chiefly in the sub-tropical north-eastern hills with its extension towards cold sub-temperate-temperate east Himalayan region. During plant explorations to Manipur and Mizoram some information on the uses of this woody climber was collected, along with a collection of fruit/seed material (locally

called *Khaum*) from Kolasib tract (Mizoram). This note deals with the fruit/seed characteristics of this plant and the native uses of the kernel which constitutes the edible part, besides presenting data on the oil-content/composition of the seed.

The fruit—a pomiform gourd (Fig. 1) does not exhibit much variation. It has brownish/yellowish colour, is pulpy inside holding 6 to 8 large mature seeds, each upto 10×6×2 cm. Each seed or often a pair of seeds is wrapped in a hard covering and inside this is the seed proper (Fig. 2) with a thin, brittle tests, pithy, thick (2-4 mm) integument and the large cotyledons—the kernel comprising the oil-rich commercially exploitable part of the plant. It has been reported that the kernel which is